

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-28 (Canceled).

Claim 29 (New): A power transmission system having an input member and an output member for transmitting power, and an oil pump for discharging oil by a relative rotation between a first rotary member and a second rotary member, which is driven by the power transmitted between the input member and the output member, wherein:

the input member and the first rotary member are connected with each other in a power transmittable manner, and the output member and the second rotary member are connected with each other in a power transmittable manner; and comprising:

a transmission member for connecting the first rotary member and the second rotary member in a power transmittable manner; and

a control valve for controlling a power transmission state between the first rotary member and the second rotary member, by controlling an oil discharge condition of the oil pump.

Claim 30 (New): The power transmission system as claimed in Claim 29, wherein:

the oil pump is a radial piston pump comprising a piston which is arranged in any one of the first rotary member and the second rotary member, and which acts radially in a direction perpendicular to a rotation axis of the first rotary member and the second rotary member.

Claim 31 (New): The power transmission system as claimed in Claim 29, further comprising:

a control means for controlling the discharge condition of the oil pump by controlling the control valve on the basis of an operating condition of a vehicle.

Claim 32 (New): The power transmission system as claimed in Claim 31, wherein:
the transmission member is configured to increase torque transmitted between the first rotary member and the second rotary member in accordance with a reduction of the discharge amount of the oil pump, or a rise in a discharge pressure of the oil pump; and

the control means comprises a means for controlling the control valve so that the discharge amount of the oil pump is reduced, or so that the discharge pressure of the oil pump is raised, according to an increase in a target value of the torque transmitted between the input member and the output member.

Claim 33 (New): The power, transmission system as claimed in Claim 31, wherein:
the control means comprises a means for controlling the control valve so that the discharge amount or the discharge pressure of the oil pump is adjusted to a target value of a speed difference between the first rotary member and the second rotary member; and

the target value of the speed difference between the first rotary member and the second rotary member is determined,

by determining a target value of torque transmitted between the first rotary member and the second rotary member so that vibration and noise resulting from a fluctuation of the torque transmitted from the input member to the output member is suppressed within a permissible value, and

by determining a target speed difference between the first rotary member and the second rotary member on the basis of the determined target value of the torque.

Claim 34 (New): The power transmission system as claimed in Claim 31, wherein:
the control means comprises a means for controlling the control valve so that the discharge amount or the discharge pressure of the oil pump is adjusted in accordance with a fluctuation of torque transmitted from the input member to the output member.

Claim 35 (New): The power transmission system as claimed in Claim 29, further comprising:

a planetary gear mechanism having three rotary elements capable of rotating differentially;

whereas the second rotary member comprises a first construction member and a second construction member, which are connected individually with two rotary elements of the planetary gear mechanism, and

whereas the first construction member and the second construction member are arranged coaxially in a predetermined direction; and

a coupling mechanism for connecting the first rotary member selectively with the first construction member or the second construction member in a torque transmittable manner, by moving the transmission member in a predetermined direction.

Claim 36 (New): The power transmission system as claimed in Claim 35, wherein:
the oil pump is a radial piston pump comprising a piston which is arranged in the first rotary member, and which acts radially in a direction perpendicular to the rotation axis of the first rotary member and the second rotary member;

the piston is equipped with the transmission member;

the first construction member and the second construction member are provided individually with a cam to which the transmission member is contacted;

the cam of the first construction member and the cam of the second construction member are arranged coaxially in a predetermined direction; and further comprising:

a smoothing mechanism for smoothing a movement of the transmission member between the cam of the first construction member and the cam of the second construction member.

Claim 37 (New): The power transmission system as claimed in Claim 35, wherein: the planetary gear mechanism is a double-pinion type planetary gear mechanism, which comprises,

a sun gear as the first rotary element,

a ring gear as the second rotary element, and

a carrier as the third rotary element for holding a first pinion gear meshing with the sun gear and a second pinion gear meshing with the first pinion gear,

whereas the first construction member is connected with the sun gear, and the second construction member is connected with the carrier; and further comprising: a brake for allowing the ring gear to rotate, in a case the transmission member and the first construction member are connected with each other in a power transmittable manner.

Claim 38 (New): The power transmission system as claimed in Claim 29, further comprising:

a transmission to which the power of the output member of the oil pump is transmitted.

Claim 39 (New): The power transmission system as claimed in Claim 38, further comprising:

a hydraulic control unit for controlling the transmission.

Claim 40 (New): The power transmission system as claimed in Claim 39, wherein:
the transmission comprises a hydraulic servo mechanism, and
the oil pressure or the flow amount of an operating oil to be fed to the hydraulic servo mechanism is controlled by the hydraulic control unit.

Claim 41 (New): The power transmission system as claimed in Claim 38, wherein:
the output member functions also as an input shaft of the transmission.

Claim 42 (New): The power transmission system as claimed in Claim 29, further comprising:

a prime mover for generating a driving force to run the vehicle, and
wherein the power of the prime mover is transmitted to the input member.

Claim 43 (New): The power transmission system as claimed in Claim 42, wherein:
the prime mover is an engine; and
the input member is a crankshaft of the engine.

Claim 44 (New): The power transmission system as claimed in Claim 29, further comprising:

a hydraulic control unit to which the operating oil is fed.

Claim 45 (New): The power transmission system as claimed in Claim 39, further comprising:

a hydraulic control unit to which the operating oil discharged from the oil pump is fed.

Claim 46 (New): The power transmission system as claimed in Claim 44, further comprising:

a hydraulic control unit to which the operating oil discharged from the oil pump is fed.

Claim 47 (New): The power transmission system as claimed in Claim 29, wherein: the power of the prime mover for generating a driving force to run the vehicle is transmitted to a wheel through the oil pump, the transmission, and a deferential.

Claim 48 (New): The power transmission system as claimed in Claim 38, wherein the transmission comprises a forward/backward switching mechanism, and a continuously variable transmission.

Claim 49 (New): The power transmission system as claimed in Claim 47, wherein: the transmission comprises a forward/backward switching mechanism, and a continuously variable transmission.

Claim 50 (New): The power transmission system as claimed in Claim 30, wherein: the power of the prime mover is transmitted to the second rotary member through the first rotary member;

the piston is arranged in the first rotary member;

the cam is arranged in a circumferential direction of the second rotary member; and

the piston moves radially in consequence of its rotational transfer in the circumferential direction of the cam resulting from the relative rotation between the first rotary member and the second rotary member.

Claim 51 (New): The power transmission system as claimed in Claim 29, wherein:
the control valve comprises a spool with an action controlled by energizing a solenoid, and a port connected with an oil discharging passage of the oil pump; and
a section area of the port is controlled by the action of the spool thereby controlling the oil discharge amount of the oil pump.

Claim 52 (New): The power transmission system as claimed in Claim 31, further comprising:
a prime mover for generating a driving force to run the vehicle,
wherein power of the prime mover is transmitted from the input member to the output member,
wherein the control valve comprises a port connected with an oil discharging passage of the oil pump; and
wherein the control means comprises a means for controlling a section area of the port of the control valve on the basis of a result of a comparison between an actual speed and a target speed of the prime mover.

Claim 53 (New): The power transmission system as claimed in Claim 31, further comprising:
an oil requiring portion to which the oil discharged from the oil pump is fed; and

wherein the control valve comprises a port connected with an oil discharging passage of the oil pump; and

wherein the control means comprises a means for controlling a section area of the port of the control valve on the basis of a result of a determination of the oil pressure and the feeding amount required in the oil requiring portion.

Claim 54 (New): The power transmission system as claimed in Claim 31, wherein:

the control valve comprises a port connected with an oil discharging passage of the oil pump; and

the control means comprises a means for controlling a section area of the port of the control valve on the basis of a result of a determination of a speed difference between the first rotary member and the second rotary member.

Claim 55 (New): The power transmission system according to Claim 44, wherein:

the oil discharged from the oil pump to the oil discharging passage is fed to the hydraulic control unit through the control valve; and

the control valve comprises,

a port connected with an oil discharging passage,

a spool for controlling a section area of the port, which is reciprocable in an axial direction,

an elastic member for applying an elastic force to the spool in the axial direction,

a control port, to which a control oil pressure regulated by the hydraulic control unit is input, and which applies a force to the spool in a same direction as the force applied by the elastic member, and

a feedback port, which is connected with the oil discharging passage of the oil pump, and to which the oil pressure for applying a force to the spool in a direction opposite to the force applied to the spool by the elastic member is input.

Claim 56 (New): The power transmission system according to Claim 55, wherein:
the control means comprises a means for controlling a discharge pressure of the oil pump on the basis of a result of comparison between an actual speed and a target speed of the prime mover.

Claim 57 (New): The power transmission system according to Claim 55, further comprising:

an oil requiring portion to which the oil discharged from the oil pump is fed; and
wherein the control means comprises a means for controlling the discharge pressure of the oil pump by controlling the control valve on the basis of a result of a determination of the required oil pressure and the required feeding amount of the oil in the oil requiring portion.

Claim 58 (New): The power transmission system according to Claim 55, wherein:
the control means comprises a means for controlling the discharge pressure of the oil pump by controlling the control valve on the basis of a result of determination of a speed difference between the first rotary member and the second rotary member.

Claim 59 (New): The power transmission system as claimed in Claim 29, further comprising:

a controller for controlling the discharge condition of the oil pump by controlling the control valve on the basis of an operating condition of a vehicle.

Claim 60 (New): The power transmission system as claimed in Claim 59, wherein:

the transmission member is configured to increase torque transmitted between the first rotary member and the second rotary member in accordance with a reduction of the discharge amount of the oil pump, or a rise in a discharge pressure of the oil pump; and

the controller comprises a device for controlling the control valve so that the discharge amount of the oil pump is reduced, or so that the discharge pressure of the oil pump is raised, according to an increase in a target value of the torque transmitted between the input member and the output member.

Claim 61 (New): The power transmission system as claimed in Claim 59, wherein:

the controller comprises a device for controlling the control valve so that the discharge amount or the discharge pressure of the oil pump is adjusted to a target value of a speed difference between the first rotary member and the second rotary member; and

the target value of the speed difference between the first rotary member and the second rotary member is determined,

by determining a target value of the torque transmitted between the first rotary member and the second rotary member so that vibration and noise resulting from a fluctuation of the torque transmitted from the input member to the output member is suppressed within a permissible value, and

by determining a target speed difference between the first rotary member and the second rotary member on the basis of the determined target value of the torque.

Claim 62 (New): The power transmission system as claimed in Claim 59, wherein:
the controller comprises a device for controlling the control valve so that the
discharge amount or the discharge pressure of the oil pump is adjusted in accordance with a
fluctuation of torque transmitted from the input member to the output member.